

**DEPARTMENT OF TRANSPORTATION****DIVISION OF ENGINEERING SERVICES**

Office of Structural Materials

Quality Assurance and Source Inspection



Bay Area Branch

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Contract #: 04-0120F4Cty: SF/ALA Rte: 80 PM: 13.2/13.9File #: 69.28**WELDING INSPECTION REPORT****Resident Engineer:** Pursell, Gary**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-008372**Date Inspected:** 04-Aug-2009**Project Name:** SAS Superstructure**OSM Arrival Time:** 1845**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 645**Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **Location:** Shanghai, China**CWI Name:** See Below**CWI Present:** Yes No**Inspected CWI report:** Yes No N/A**Rod Oven in Use:** Yes No N/A**Electrode to specification:** Yes No N/A**Weld Procedures Followed:** Yes No N/A**Qualified Welders:** Yes No N/A**Verified Joint Fit-up:** Yes No N/A**Approved Drawings:** Yes No N/A**Approved WPS:** Yes No N/A**Delayed / Cancelled:** Yes No N/A**Bridge No:** 34-0006**Component:** OBG and Tower Fabrication**Summary of Items Observed:**

CWI Inspectors: Mr. Du Zhiqun and Mr. Wang Chuan Qing

On this date CALTRANS OSM Quality Assurance (QA) Inspector, Mr. Paul Dawson, arrived on site at the Zhenhua Port Machinery Company (ZPMC) facility at Changxing Island, in Shanghai, China, for the purpose of monitoring welding and fabrication of the San Francisco / Oakland Bay Bridge (SFOBB) components. This QA Inspector observed the following:

**Tower Bay 10**

ZPMC issued "Inspection Notification Sheet" number 3861 informing QA that ZPMC has completed visual and magnetic particle inspections of lift 2 north tower diagonal stiffener to skin C & D welds NSD1-TL8J/L-57 and NSD1-TL8J/L-58 and diagonal stiffener to diaphragm plate welds along the full length of lift 2 north tower. This QA Inspector performed random visual and random magnetic particle inspections of welds NSD1-TL8J/L-57 and NSD1-TL8J/L-58 between the bottom of the lift 2 north tower and 65 meter elevation and welds NSD1-TL8C/L-62, NSD1-TL8C/L-63, NSD1-TL8C/L-160, NSD1-TL8C/L-161, NSD1-TL8D/L-39, NSD1-TL8D/L-122, NSD1-TL8D/L-93, NSD1-TL8D/L-94, NSD1-TL8E/L-34, NSD1-TL8E/L-35, NSD1-TL8E/L-109, NSD1-TL8E/L-110, NSD1-TL8F/L-55, NSD1-TL8J/L-57 and NSD1-TL8J/L-58. ZPMC Inspectors have previously accepted all of these welds. This QA Inspector performed random visual inspections of portions of the welds listed above and observed that weld NSD1-TL8J/L-58 is approximately 4 mm below flush on the top surface near 60 meter elevation. ZPMC QC personnel inspected this location and they decided to perform weld repairs of this underfilled weld location. Following completion of the welding repair and QC Inspections of

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## WELDING INSPECTION REPORT

( Continued Page 2 of 3 )

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the weld repair this QA Inspector determined the welds listed above appear to comply with visual and magnetic particle requirements as specified in applicable contract documents. For additional information on these magnetic particle inspections see the TL6028 Magnetic Particle Test Report.

This QA Inspector observed ZPMC welder Mr. Xu Xiuping, stencil 057244, is using welding procedure WPS-B-T-2232-TC-T4B-F to make flux cored groove welds in the 2G (horizontal) position on weld NSD1-FCSA4-1B/C-6. This QA Inspector measured a welding current of approximately 310 amps and 29.2 volts and Mr. Xu Xiuping is qualified to make this weld. This QA Inspector confirmed a minimum base material temperature of 110 degrees Celsius and that the base material appears to have been preheated with an electric heating element prior to welding. Items observed on this date appeared to generally comply with applicable contract documents.

This QA Inspector observed ZPMC welder Mr. Ju Jun, stencil 201821, is using welding procedure WPS-B-T-2232-TC-T4B-F to make flux cored groove welds in the 2G (horizontal) position on weld NSD1-FCSA4-1C/C-6. This QA Inspector observed ZPMC CWI Mr. Du Zhiquan measured a welding current of approximately 320 amps and 31.8 volts. This QA Inspector verified Mr. Ju Jun is qualified to make this weld. This QA Inspector confirmed a minimum base material temperature of 110 degrees Celsius and that the base material appears to have been preheated with an electric heating element prior to welding. Items observed on this date appeared to generally comply with applicable contract documents.

This QA Inspector observed ZPMC welder Ms. Dong Xumei, stencil 054069, is using welding procedure WPS-B-T-2232-TC-T4B-F to make flux cored groove welds in the 2G (horizontal) position on weld NSD1-FCSA4-1C/C-5. This QA Inspector observed ZPMC CWI Mr. Du Zhiquan measured a welding current of approximately 300 amps and 32.0 volts. This QA Inspector verified Ms. Dong Xumei is qualified to make this weld. This QA Inspector confirmed a minimum base material temperature of 110 degrees Celsius and that the base material appears to have been preheated with an electric heating element prior to welding. Items observed on this date appeared to generally comply with applicable contract documents.

This QA Inspector observed ZPMC welder Mr. Sun Daoqing, stencil 040269 is using shielded metal arc process WPS-345-SMAW 2G(2F)-Repair to add additional weld material to resolve the underfill condition in north tower lift 2 diagonal stiffener weld NSD1-TL8H/L-58. This QA Inspector observed a welding current of approximately 150 amps. This QA Inspector observed Mr. Sun Daoqing is qualified to make this weld. Items observed on this date appeared to generally comply with applicable contract documents.

### Summary of Conversations:

See above.

### Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Serge Sinevod phone: 134-8257-0045 , who represents the Office of Structural Materials for your project.

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**Inspected By:** Dawson,Paul

Quality Assurance Inspector

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## WELDING INSPECTION REPORT

( Continued Page 3 of 3 )

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**Reviewed By:** Carreon,Albert

QA Reviewer